What is claimed is:

Sub A1

1. A transformer core comprising a plurality of segments of amorphous metal strips, each segment comprising at least one packet of said strips.

2. A core segment comprising a plurality of packets of cut amorphous metal strips.

3. A core segment, as recited by claim 2, wherein each packet comprises a plurality of groups of cut amorphous metal strips arranged in a step-lap joint pattern.

4. A core segment, as recited by claim 3, having a C , I, or straight segment construction.

5. A core segment, as recited by claim 4, wherein said C, I or straight ~~stack~~ segment construction is formed by arranging said packets and groups of cut amorphous metal strips.

6. A core segment, as recited by claim 5, said segment having been annealed with a magnetic field in a batch or continuous annealing oven.

7. A transformer core, as recited by claim 1, wherein the edges of each of said segments are coated with a bonding material that protects said edges and provides said segment with increased mechanical strength.

Sub B2

8. A transformer core, as recited by claim 7, wherein said segments collectively form a core having a joint region and said coating is applied to substantially the entire surface area of said core, excluding the joint region.

9. A core segment as recited by claim 2, wherein each of said packets has a plurality of joint ends supported separately for assembly into a finished transformer core.

10. A method for building a transformer core comprising the steps of:

a) forming a plurality of segments of amorphous metal strips, each segment

comprising at least one packet of said strips and each packet comprising a plurality of groups of cut amorphous metal strips arranged in a step-lap pattern; and

b) assembling the segments together to form a transformer core.

11. A method for building a transformer core, as recited by claim 10, wherein said core has a joint region and said method further comprising the step of coating the edges of at least one of said segments with a bonding material that protects said edges and provides said segment with increased mechanical strength.

12. A method for building a transformer core, as recited by claim 11, wherein said bonding material is applied to a substantial portion of said core.

13. A method for building a transformer core, as recited by claim 12, wherein said bonding material is applied to substantially the entire surface area of said core, excluding said joint region.

14. A transformer core as recited by claim 1, comprising two C segments.

15. A transformer core as recited by claim 14, comprising two C segments and an even number of straight segments.

16. A transformer core as recited by claim 1, comprising four C segments arranged to form a shell-type core.

17. A transformer core as recited by claim 1, comprising two C segments and one I segments arranged to form a shell-type core.

18. A transformer core as recited by claim 1, comprising two C segments, one I segment and an even number of straight segments arranged to form a three-leg core for a three phase transformer.

Sub D4

A B

19. A transformer core as recited ~~by~~ claim 14, wherein ~~said~~ a core has a joint region and a ~~said~~ bonding material ~~bonding material~~ is applied to said joint region to maintain contact between segments therein.

Sub B5

20. A transformer core as recited by claim 1, wherein said strips have varying widths arranged to provide a cruciform shape cross-section.

21. A transformer core as recited by claim 1, said core being housed in an oil filled or dry-type transformer.

22. A transformer core as recited by claim 21, wherein said transformer is a distribution transformer.

23. A transformer core as recited by claim 22, wherein said transformer is a power transformer.

24. A transformer core as recited by claim 1, said core being used in a voltage conversion apparatus.

Sub D6

25. A transformer core as recited by claim 1, wherein each of said strips has a composition defined essentially by the formula: $M_{70-85}\ Y_{5-20}\ Z_{0-20}$, subscripts in atom percent, where "M" is at least one of Fe, Ni and Co, "Y" is at least one of B, C and P, and "Z" is at least one of Si, Al and Ge; with the provisos that (i) up to 10 atom percent of component "M" can be replaced with at least one of the metallic species Ti, V, Cr, Mn, Cu, Zr, Nb, Mo, Ta and W, and (ii) up to 10 atom percent of components (Y + Z) can be replaced by at least one of the non-metallic species In, Sn, Sb and Pb.

26. A core segment as recited by claim 2, wherein each of said strips has a composition defined essentially by the formula: $M_{70-85}\ Y_{5-20}\ Z_{0-20}$, subscripts in atom percent, where "M" is at least one of Fe, Ni and Co, "Y" is at least one of B, C and P, and "Z" is at least one of Si, Al and Ge; with the provisos that (i) up to 10 atom percent of component

"M" can be replaced with at least one of the metallic species Ti, V, Cr, Mn, Cu, Zr, Nb, Mo, Ta and W, and (ii) up to 10 atom percent of components (Y + Z) can be replaced by at least one of the non-metallic species In, Sn, Sb and Pb.

~~27. A method for building a transformer core as recited by claim 10, wherein each of said strips has a composition defined essentially by the formula: $M_{70-85}\ Y_{5-20}\ Z_{0-20}$, subscripts in atom percent, where "M" is at least one of Fe, Ni and Co, "Y" is at least one of B, C and P, and "Z" is at least one of Si, Al and Ge; with the provisos that (i) up to 10 atom percent of component "M" can be replaced with at least one of the metallic species Ti, V, Cr, Mn, Cu, Zr, Nb, Mo, Ta and W, and (ii) up to 10 atom percent of components (Y + Z) can be replaced by at least one of the non-metallic species In, Sn, Sb and Pb.~~

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